You Are What You Eat…..
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Compelling evidence proves that lifestyle changes (including diet, physical activity, and behavior) prevent or delay major chronic diseases, including cardiovascular disease, cancer, obesity, osteoporosis, and diabetes.

Wow…just a few changes in what you eat and how you live can really aid in one's overall health and well-being! We're not talking about Fad Diets here….we're talking about increasing physical activity and making changes in the consumption of the proportions of the macronutrients: carbohydrates, fat, and protein.

The average diet in the United States for individuals older than 20 years consists of 34% kcal from total fat, 49% kcal from carbohydrates, 15% to 16% kcal from protein, and 2% to 3% of kcal from alcohol. Fad Diets usually promote a decrease in the consumption of one macronutrient leading to an increase in another; for example, a low-carbohydrate diet usually results in a higher fat and protein dietary intake. The appropriate diet prescription includes an individualized and appropriate balance of the macronutrients to lead to the maintenance of a healthy weight.

This article will focus on the relationship of nutrition to chronic diseases: cardiovascular disease, obesity, cancer, osteoporosis, and diabetes.

Cardiovascular Disease and Diet

Cardiovascular diseases leading to heart attacks and strokes are the leading causes of death and disability in the United States and worldwide. The World Health Organization currently attributes 1/3rd of all global deaths to cardiovascular disease. This ongoing and increasing health problem underlines the need to improve our communication of improved diet and lifestyle interventions. Disease prevention occurs over a lifetime and, thus, dietary changes need to be maintained to be effective.

The primary dietary factors that prevent cardiovascular disease include diets moderate or low in saturated fat and cholesterol, decreased transfatty acids, increased omega-3 fatty acids, and shifted sources of fat to more monounsaturated fats. Vitamins decrease cardiovascular risk if patients consume an adequate food intake of antioxidants and dietary vitamins (B12, B6, and folate). In addition, the recommended intake of fruits, vegetables, breads, cereals, nuts, seeds, and other plant foods that provide fiber decrease cardiovascular risk. A variety of other foods and food components, such as alcohol and soy protein, have been investigated to decrease cardiovascular risk.

Obesity and Diet

The prevalence of obesity has increased dramatically from 13.4% in 1960 to 30.9% in 2000 among adults. Poor diet coupled with physical inactivity is the second

leading cause of preventable death. It is estimated that 400,000 US deaths in 2000 are attributable to being overweight, having a poor diet, and being inactive.

Obesity is a chronic, multifactoral problem caused by factors over which the individual has no control (i.e. genetics, gender, age, and developmental stages) and those that can be modified for weight loss (i.e. diet, physical activity, medications, environmental contributions, and social considerations).

The increased prevalence of obesity in the US reflects a change in lifestyle patterns influenced by an overabundance of food choices, large portion sizes, and fast foods; industrialization, technology, and conveniences, which decrease opportunities and motivation for physical activity; and a decline in cigarette smoking.

Many types of weight loss and weight management programs are available. It has been estimated that $30 billion to $50 billion dollars are spent annually on weight loss gimmicks and remedies. Even with programs that result in weight loss, the results are often short term, and regaining weight is a significant problem for most individuals who initially lose weight.

The key to sustaining weight loss is to adopt permanent diet and physical activity changes. A more conservative means for achieving healthy body weight recommended by the American Dietetic Association's guidelines includes adoption of a healthful eating style with an energy intake that does not exceed expenditure.

Cancer and Diet

The relationship of nutrition and cancer is complex and one that involves mutations or abnormalities in one's DNA (genetic make-up). Dietary intervention is more effective in the early stages of cancer because diet and lifestyle over a lifetime may determine if there are multiple DNA mutations leading to the development of a precancerous lesion. Dietary interventions may also be effective for preventing reoccurrence of cancer and risk for other cancers after an initial cancer site has been identified.

National diet recommendations include increases in plant-based foods (especially fruits and vegetables), weight maintenance, regular physical activity, low-fat food choices, and alcohol consumption in moderate amounts. Also, it is recommended not to eat charred food or food that has been cooked directly over a flame. The dietary factor with the highest overall risk for cancer is excessive calorie intake from all food sources.

Osteoporosis and Diet

Osteoporosis contributes to 1.3 million fractures annually in the United States. Peak bone mass is usually achieved by age 30 years for both men and women. Therefore, it is important to monitor one's calcium and vitamin D intake during childhood and into early adulthood. A decreased risk of fractures has been consistently shown for women

who have higher milk or dairy intake at age 30 years or younger, but not necessarily for women older than age 50 years.

The risk factors for osteoporosis include genetics, diet, activity, lifestyle, hormone status, medication use, and some diseases. Contribution factors for reduced bone mass include hormone deficiencies such as estrogen; inadequate calcium and vitamin D intake; tobacco and alcohol abuse; and decreased physical activity. If bone loss is caused by low calcium intake, and increase in calcium and vitamin D may prevent osteoporosis. A high calcium intake, however, does not protect a person against bone loss caused by hormone changes, physical activity, or other causes.

Diabetes and Diet

The prevalence of diabetes in the United States has increased by 50% from 1990 to 2000. Type 1 diabetes is less common and involves a deficiency of insulin secretion due to autoimmune processes. Type 2 diabetes is more prevalent and is characterized by insulin resistance and an inadequate insulin secretion response.

Type 2 diabetes has many different forms, but obesity may increase insulin resistance and contribute to diabetes development when coupled with genetic predisposition, increasing age, and lack of physical activity. Type 2 diabetes has been increasing in children and adolescents with combinations of risk factors, especially increasing rates of excessive weight and obesity.

Research studies have supported the value of lifestyle changes that include diet and physical activity to prevent diabetes in high-risk persons. Closely monitoring dietary intake and physical activity leading to a reduction in weight has been shown to prevent diabetes.

Summary

Prevention of chronic disease with dietary intervention is one tool in the arsenal of lifestyle changes that combine to effectively improve disease risk. Dietary treatment of the diet-related chronic diseases – cardiovascular disease, cancer, obesity, osteoporosis, and diabetes – improves morbidity, mortality, and quality of life. Prevention efforts for children need to be increased if the potential benefits of healthy lifestyles are to be realized.

If you have any questions, please speak with your PCM or a Registered Dietitian. They have the medical knowledge to assist you if you desire to make lifestyle changes to prevent your risk of certain chronic diseases.